

# AU-DVRS-04LH

# User's Manual



# DIGITAL VIDEO RECORDER



## **Installation and Precaution**

### **1. Warning**

- This unit is designed, to be used in indoor condition, to reduce fire and shock hazard, do not expose the unit to rain or moisture.
- Prevent any foreign object or liquid to enter the unit. In case, there is any foreign object or liquid go inside the unit, cut off the power immediately, and call for a qualified service person to inspect and test the unit, before putting the unit back to operation.
- Do not touch any part of the unit with wet hands.
- Do not block any part of ventilation grill / holes of this unit. Do not place other equipment on the top of this unit.
- Place the unit away from direct sunlight, hot source, and radiator.
- Install the unit horizontally, and in well ventilation place, to prevent the unit to become overheated.
- Do not operate the unit under power supply other than nominal voltage.

### **2. Precaution**

- No user serviceable components inside this unit. Refer servicing to qualified service personnel. In case of malfunction, contact our local agent or regional representative for repairing.
- This unit is delivered without the hard disk by default. Please contact our local agent or regional representative, so they can install hard disk to suit for your storage and video image retention requirement.
- This unit supports all commercially available IDE hard disk.
- In order to ensure stable operation of this unit, IDE hard disk from reputable factory should be used.
- This unit operates under 100-240 VAC, do not operate this unit outside this voltage range.
- Once after the unit is connected to power supply source, some part of this unit is already carrying high voltage, even without turning on the unit by pressing the “Power” button on remote control and front panel. It is strongly recommended to completely unplug the unit from power supply source, before opening up the unit for any kind of servicing.

## **Delivery Packing Checklist**

This unit is packed with the following accessories, please kindly check immediately after unpacking the box :

- 1、 1 no. of power supply cord
- 2、 1 no. of operating manual
- 3、 1 no. of Infra-red remote controller
- 4、 1 set of installation accessories

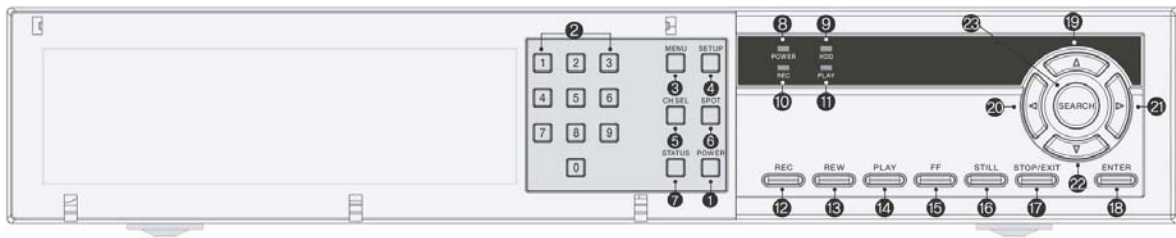
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# Front Panel



## 1.Power Button

Turn the unit on or off.

## 2.Digits Buttons

Change time, password, and input IP address

## 3.Menu Button

Go to the top level of the menu tree

## 4.Setup Button

Other operation Menu

## 5.Channel Select Button

Select the channel. Toggle the screen between QUAD, 1,2,3 or 4

## 6.SPOT Button

Put the display mode to Spot Mode. Toggle the screen between Quad, Channel 1.2.3 or 4, under Spot viewing

## 7.STATUS Button

System status indication

## 8.Power LED

Power on/off indication

## 9.HDD LED

HDD operation indication

## 10.REC LED

REC operation indication

## 11.Play LED

playback operation indication

## 12.REC Button

Toggle of recording on and off

## 13Rewind Button

Active only under playback operation, Toggle between 2X,4X,8X or 16X reverse Play

## 14.Playback Button

Active only under playback operation. Return the playback to 1X forward playback.

## 15.Fast Forward Button

Active only under playback operation. Toggle between 2X,4X,8X or 16X forward play

## 16.Pause/Frame Advance Button

Active only under playback operation. Pause the screen on playback

## 17.STOP/EXIT Buttons

Active only under playback operation. Stop playback process/Cancel of data input or leave the current menu tree



18.Enter Button

Confirm of the data input

19.Up Button

Up action for menu tree navigation, pan/tilt etc..

20.Left Button

Left action for menu tree navigation, pan/tilt control etc..

21.Right Button

Right action for menu tree navigation, pan/tilt control etc..

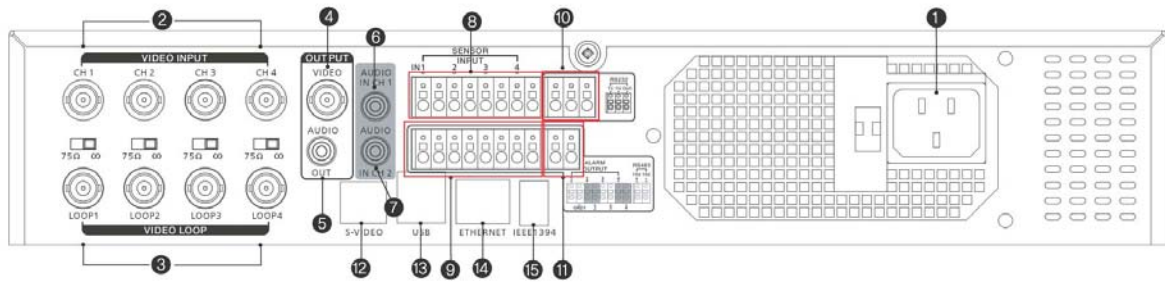
22.Down Button

Down action for menu tree navigation, pan/tilt control etc..

23.Search Button

Go to "Search" item under the menu tree. Let user to search for video clip to playback

# Rear Panel



1. Power Input
2. Camera Input 1~4
3. Loop Out 1~4
4. Video Output
5. Audio Output
6. Audio Input 1
7. Audio Input 2
8. Sensor Input 1~4
9. Alarm Output 1~4
10. RS232 Port
11. RS485 Port
12. S-Video Output
13. USB Port
14. LAN Port
15. IEEE 1394 Port

# Hard disk installation

This unit is delivered without the hard disk by default. Please contact our local agent or regional representative, so they provide qualified service personnel to install hard disk to suit for your storage and video image retention requirement. The unit is not operational before installation of hard disk. The maximum number of IDE hard disks, which can be installed in this unit is four. The size and number of hard disks to be installed is to be determined by the video image quality and the online video retention period requirement, please kindly refer to the storage calculation table below to determine the total size of hard disks to be installed.

\*\*\*\*\*Storage Table(720X480)

Frame Rate (Frame/Sec)	Standard		High 1		High 2	
	240GB	480GB	240GB	480GB	240GB	480GB
25	220hr	440hr	117.9hr	235.8hr	78.5hr	157hr
12.5	440hr	880hr	235.8hr	471.6hr	157hr	314hr
8.3	660hr	1,320hr	353.7hr	707.4hr	235.5hr	471hr
5	1,100hr	5,500hr	589.5hr	1,179hr	392.5hr	785hr
2.5	2,200hr	6,600hr	1,179hr	2,358hr	785hr	1,570hr
1	5,500hr	11,000hr	2,948hr	5,895hr	1,963hr	3,926hr

## Installation Procedure :

1 、 Unplug the unit from any power source. Once after the unit is connected to power supply source, some part of this unit is already carrying high voltage, even without turning on the unit by pressing the “Power” button on remote control and front panel. It is strongly recommended to completely unplug the unit from power supply source, before opening up the unit for any kind of servicing.

2 、 Open the top of the unit case by undoing the screws. Identify the two hard disk holder (as indicated in the figure above). Each hard disk holder can hold two IDE Hard Disks.

3 、 Install the hard disk(s) on the hard disk rack, and use the screws (provided with this unit as installation accessories) to fix the hard disk onto the rack securely.

4 、 Connect the IDE hard disk(s) onto the ribbon cable. If one IDE bus contain more than one hard disk, then one should be set up as Master and the other as Slave, by setting the jumper on hard disks respectively (please refer to the installation instruction of the IDE hard disk).

5 、 Connect the IDE ribbon cable to one of the IDE slot on the main board on the other end.

6 、 Connect the internal DC supply cable onto each hard disk.

7 、 Make sure there is no strained ribbon cable and DC supply cable inside, and then close the casing top. Fasten the casing screws.

8 、 Format the IDE hard disk according to the procedure as stated under “Hard Disk formatting” section of this manual.

# Voltage Output & Sensor Input and Alarm Output Connection

## Sensor Input

This unit has 4 numbers of isolated Sensor input to take voltage free relay outputs from peripheral alarm sensors.

These Sensor inputs are protected from high voltage input from outside, by providing the opt-isolated design

Sensor Input Setup :

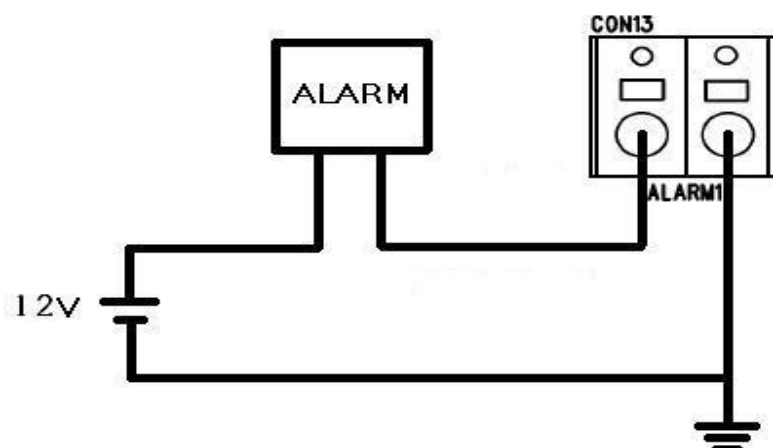
Set the sensor type to “no(normal open)” or “nc(normal close)”.

This unit need to input external power supply to connect each sensor.

## Alarm Output

Four alarm outputs are built into the system,

This unit need to input external power supply to connect each alarm.



# Power ON and OFF

## 1、Power On

- Before the first time of turning on the unit for operation, please make sure all points listed in the “Installation and Precaution” section has been studied and followed.
- Double check all connections to the unit is correct, and power supply connection to the unit is proper.
- Double check that IDE Hard Disk(s) are connected and installed properly (and formatted according to procedure as listed in this manual)
- Double check the video format of the unit matches the video format of CCTV and monitor.
- If all the above double-checking is done without problems, then peripheral equipment can be powered on..
- Once the power is connected to the unit, the power operation LED should be lit.
- If the powering down of the unit happened during scheduled recording, then on powering on, the unit will go into recording automatically.
- If the unit is with recording schedule, and the powering on time is within the schedule recording period, then the recording will start automatically with the schedule recording per-configured properties.

## 2、Power Off

- To power off the unit, operator should stop the recording, exit from configuration menu and any playback operation first.
- Operator should press “■” to stop the recording or playback, before powering off the unit.
- It is recommended to turn off the unit, before powering down any of the peripheral equipment.
- If the unit will be left powered off and not in operation for a long period of time, it is recommended to unplug it from power source.
- **The unit should not be powered off during data backup process, in order to prevent data loss.**
- **The unit should not be powered off during software upgrade process, in order to prevent failure to restart operation of the unit. In case software upgrade process is interrupted by accidentally powering off the unit, assistance should be seek from our local agent or regional representative to repair the unit.**

# System Setup

The unit should be configured using the menu, to tailor suit the unit for specific site operation, if not, the unit will operate under ex-factory default settings.

## 1、 To enter SETUP

Press “Setup” button on remote controller or front panel to go into Setup Menu.

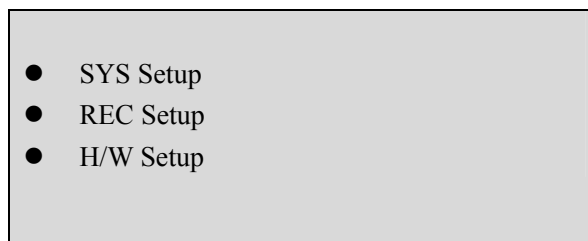
## 2、 Menu and screen prompt operation

After entering the menu, operator can navigate the items by using the up button and down button, either on front panel or remote controller, to highlight the items on the present level of the menu. To go down one level to the highlighted item under the present level of the menu, “Enter” key should be pressed either on front panel or remote controller. To go up one level and exit from the present item, “Exit” key should be pressed either on front panel or remote controller.

When inside dialogue box, operator can use the “Up” or “Down” key to go through the circular list of items. On pressing the “Enter” key, the selectable field under the item will be showed, and the field can be navigated by “Up” or “Down” button, and the highlighted field will be selected on pressing the “Enter” key. Editing of the item will be abandoned, on pressing “Exit” key.

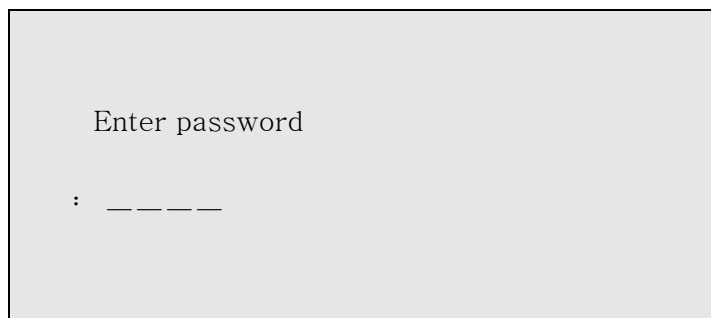
## 3、 Setup Menu

By highlight the “Setup” item on the main menu and press “Enter”, and the screen prompt will be as follows :



### Enter System Password

To enter the system setting menu items, the operator will be prompted to enter the system password on this point. This password protection is to prevent un-authorized alternation of system settings and recording settings.



The unit's system password is a combination of numeric digital between 0 and 9. Numeric key on remote controller or front panel can be used to enter the password. On entering of the system password, for security reasons, the on-screen indication is represented by “\*”.

The ex-factory default system password is “0000”. It is strongly recommended to change the system password before putting this unit into actual operation (please refer to later section of this manual for procedure of changing the system password).

## 1、System Setting

After entering of system password, the screen prompt will be changed as follows:

- Password
- Language
- Time set
- Date format
- OSD format
- Default setup
- SW Update

### 1.1System Password

By highlighting the “Password” and pressing “Enter”, operator will be prompted to input the new password. Use the numeric key on remote controller or front panel, to enter a combination of 4 nos. digits from 0 to 9.

[Enter new password]

: \_ \_ \_ \_

The default password is “0000”, Enter the new password again.

[Re-enter password]

: \_ \_ \_ \_

After inputting the new system password, the screen prompt will request to enter the new password again to reconfirm.

## 1.2 Language Setting

By highlighting “Language” item and press “Enter”, the screen prompt will be changed as follows:

- Korean
- English
- Chinese simplified
- Chinese traditional
- Spanish
- French
- Japanese

Operator can highlight the desired language and press “Enter” to confirm the selection.

## 1.3 Time and Date Setting

The unit is a time sensitive devices, and a lot of operation is basing on time and date, so the unit should be set to match the actual time and date to prevent abnormal operation or mistakes in operation. By selecting “Time Set”, the screen prompt will be changed as follows:

- Year : 2004
- Month : 01
- Date : 10
- Time : 10 : 00

Use numeric keys on remote controller to input the actual time and date.

**Caution: In case there is recordings on the unit already, when the time and date settings is being changed, searching for video clips after time and date settings changed will not be possible. It is necessary to delete all recording on the unit before changing the time and date settings.**

**It can't enter this menu to set Time & Date during Recording.**

## 1.4 Date Mode(Format)

Under this item the screen prompt is as follows:

- dd/mm/yy
- yy/mm/dd
- mm/dd/yy

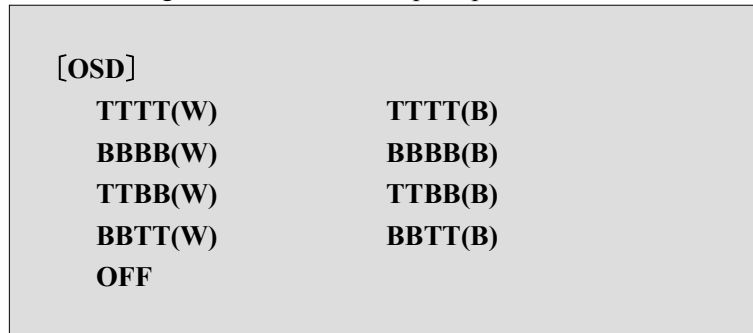


Select one of the date mode, and confirm by pressing “Enter”.

**Example) dd/mm/yy ---- Day/Month/Year**

### **1.5Time Indication Position Setting (OSD format)**

After selecting this item, the screen prompt is as follows:



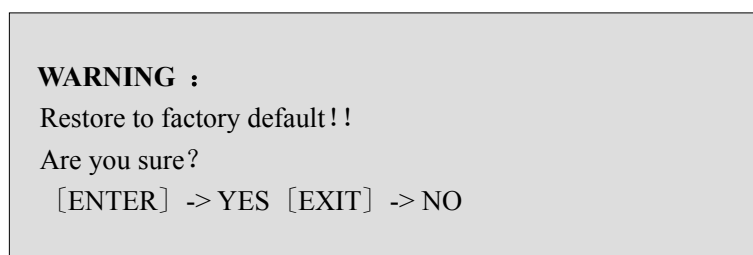
One of the eight modes of time indication position should be highlighted and confirmed by pressing “Enter”. The meaning of the eight modes is elaborated in the following example:

**Example: TTBB(W) – Channel One (Top), Channel Two (Top), Channel 3 (Bottom), Channel 4 (Bottom) and Display Color (White)**

### **1.6Default Value Setting(setup)**

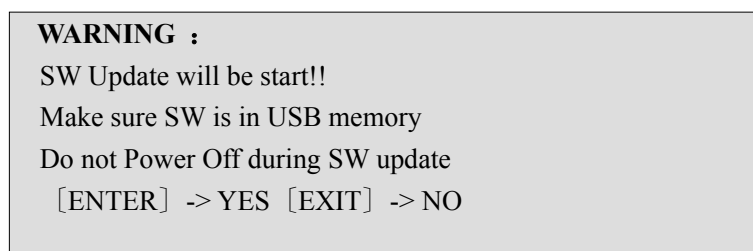
This menu item is to return all settings on this unit to ex-factory default setting. If this command is executed, all previously configured settings will be lost and reverted to ex-factory default.

To confirm on the reverting to default settings, “Enter” key should be pressed. To maintain the present settings without reverting to default settings, “Exit” key should be pressed.



### **1.7SW Update**

Via USB port can update the Firmware. To press “Enter” key to Update firmware.



# Recording Setup

## 1、 To enter the menu

Press “SETUP” button on remote controller or front panel to go into SETUP Menu.

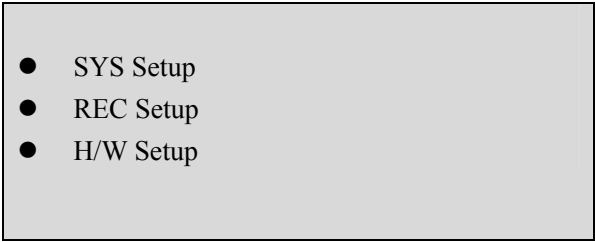
## 2、 Menu and screen prompt operation

After entering the menu, operator can navigate the items by using the up button and down button, either on front panel or remote controller, to highlight the items on the present level of the menu. To go down one level to the highlighted item under the present level of the menu, “Enter” key should be pressed either on front panel or remote controller. To go up one level and exit from the present item, “Exit” key should be pressed either on front panel or remote controller.

When inside dialogue box, operator can use the “Up” or “Down” key to go through the circular list of items. On pressing the “Enter” key, the selectable field under the item will be showed, and the field can be navigated by “Up” or “Down” button, and the highlighted field will be selected on pressing the “Enter” key. Editing of the item will be abandoned, on pressing “Exit” key.

## 3、 Setup Menu

By highlight the “Setup” item on the main menu and press “Enter”, and the screen prompt will be as follows:

- 
- SYS Setup
  - REC Setup
  - H/W Setup

### 1、 Record setting

On entering this item, the operator will be prompted to enter the system password. The numeric keys on remote controller or front panel should be used to enter the password. After successful entering the password, the screen prompt will be changed as follows:

- 
- Schedule Record
  - Event Record
  - Repeat Record
  - Frame Rate
  - Compression Rate
  - Delete Record
  - Lock/Unlock Rec

## 1.1 Scheduled Recording

Under this item, the screen prompt is as follows:

- One Time
- Daily
- Weekly

### 1.1-1 One Time

Under “One Time”, the screen prompt is as follows:

[Start]	
mm/dd/yy	01/10/04
hh:mm	10:00
[End]	
mm/dd/yy	01/10/04
hh:mm	19:55

Use numeric key to enter the start and end time and date for the one-shot scheduled recording period of time.

### 1.1-2 Daily

Under “Daily”, the screen prompt is as follows:

[Daily]	
* Start (hh:mm)	09:00
* End (hh:mm)	11:30
* Start (hh:mm)	13:00
* End (hh:mm)	18:00
* Start (hh:mm)	13:00
* End (hh:mm)	18:00

Use numeric key to enter the start and end time and date for the one-time scheduled recording period of time. Three individual period of time can be inputted for one day.

### 1.1-3 Weekly

Under “Weekly”, the screen prompt is as follows:

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

Select one of the day under a week, by highlight a day (e.g. Sunday) and press “Enter”. The screen prompt will be changed as follows:

```
[Sunday]
* Start (hh:mm)    09:00
* End (hh:mm)      11:30
* Start (hh:mm)    13:00
* End (hh:mm)      18:00
* Start (hh:mm)    13:00
* End (hh:mm)      18:00
```

Use numeric key to enter the start and end time and date for the one-time scheduled recording period of time. Three individual period of time can be inputted for one day.

Repeat this step of each day of a week, to input recording period(s) of time for 7 days of a week.

## 1.2Event Recording

Under “Event Record” the screen prompt is as follows:

- Motion Detection
- Sensor Detection

### 1.2-1Motion Detection

The Motion Detection can be used to trigger recording of the camera. When a camera picture has an increase in average change rate, then a “motion is detected”. Motion detection can be associated with a zone within a camera picture. “Motion detected” in the zone of an individual camera, will trigger recording of all cameras.

After selection of this item, the screen prompt will be changed as follows:

{ Motion Detection }

# 1	STD	SEN	{ OFF }
# 2	STD	SEN	{ OFF }
# 3	STD	SEN	{ OFF }
# 4	STD	SEN	{ OFF }

Press Up or down to select the camera number, and left or right to select the motion detection recording property.

**Motion Detection:** The “Standard”, “Sensitive” or “Off” fields, is to indicate whether the motion detection for that camera is activated or not, if activated which level of sensitivity is set.

**Sensitivity :** Two levels, “Standard” or “Sensitive”. Operator should determined the setting basing on the camera picture condition, including lighting condition, desired sensitivity and type of environment under surveillance (indoor, outdoor etc..).

**Time Setting:** The unit will record video clip starting from 30 seconds before the motion detected, and to 30 seconds after the motion detected. Pre-alarm period is depend on compression rate.

**Alarm Output :** Select whether alarm output will be triggered on motion being detected. Please refer to the alarm management setting section for further detail.

## 1.2-2 Sensor Detection

Sensor detection triggered recording is the recording mode, under which the recording will be triggered by one of the four Sensor inputs of the unit being in alarm condition. Under this item, the screen prompt is as follows:

{ Sensor Detection }

# 1	ON	{ OFF }
# 2	ON	{ OFF }
# 3	ON	{ OFF }
# 4	ON	{ OFF }

Press Up or down to select the camera number, and left or right to select the alarm input recording property.

**Alarm Input Activation:** This is to select whether an individual sensor input is activated or off. The sensor input will be ignored if the input is selected to be off.

**Time Setting: :** The unit will record video clip starting from 30 seconds before the sensor detected, and to 30 seconds after the sensor detected. Pre-alarm period is depend on compression rate.

**Alarm Output :** Select whether alarm output will be triggered on sensor being detected. Please refer to the alarm management setting section for further detail.

### 1.3 Repeat Recording

Under this “Repeat Record” item, the screen prompt is as follows:

( Repeat Record )  
ON  
OFF

If the “Repeat Record” is activated, then the on-line hard disk space will be acting as an FIFO (First In First Out) buffer, old images will be erased automatically. No operator intervention will be required on hard disk being full.

In contrast, if the “repeat Record” is not activated, then operator will be prompted on hard disk being full, no old image will be erased. If the hard disk is full, and no proper operator action is being taken, then all types of recording will be stopped until there is hard disk space for new recording.

Operator can highlight the desired option, and press “Enter” to confirm.

☞ **Default Setup by factory “ON”**

### 1.4 Recording Speed (Frame Rate)

Under this “Frame Rate” item, the screen prompt is as follows:

( Frame Rate )  
● 30(25.0) fps  
● 15(12.5) fps  
● 10(8.3) fps  
● 6(5) fps  
● 3(2.5) fps  
● 1(1.0) fps

Operator can select one of the several types of frame rate, and press “Enter” to confirm.

**Caution: All alarm triggered recording is at maximum <30(25) fps> frame rate, this manual frame rate setting is only applicable on scheduled recording.**

### 1.5 Compression Rate (Recording Quality)

Under this “Recording Quality” item, the screen prompt is as follows:

( Compression Rate )

- Standard
- High-1
- High-2

Operator can select one of the three quality level and press “Enter” to confirm. For determination of quality of recording to be selected, operator should consider the hard disk space available and desirable retention period of video clips on local hard disk(s). Please refer to the following benchmarking to estimate one’s need on retention period and hard disk space.

☞ **Storage per hour (each Channel) – Standard is 225MB / High-1 is 450MB /High-2 is 675MB**

### 1.6File Deletion

Under this “Delete Record” item, the screen prompt will look like the following sample:

NO	DATE	TIME	⟨PgUp/Dn⟩	FILE NAME
96	01/10	11:30	30 Min	S040110110000U
97	01/10	12:00	30 Min	S040110120030U
98	01/10	12:31	30 Min	S040110123100U
99	01/10	13:05	5 Min	E040110130540U
100	01/10	13:30	20 Min	E040110133000L
101	01/10	15:00	30 Min	S040110150032U
102	01/10	15:31	30 Min	S040110153150L
103	01/10	17:02	3 Min	E040110170250U
104	01/10	17:09	30 Min	S040110170920U
105	01/10	17:50	30 Min	S040110175000U
106	01/10	18:21	30 Min	S040110182110U
107	01/10	18:50	30 Min	S0401101850430U
108	01/10	20:00	30 Min	S040110200054U

Operator can delete files from the on-line hard disk(s), by highlighting files within one page using up or down keys, browse previous and next pages by using left or right keys, and confirm deletion of a file by pressing “Enter”.

### 1.7File Lock / Unlock

Under this item, operator can lock or unlock individual files. Under this item, the screen prompt will look like the following sample:

NO	DATE	TIME	〈PgUp/Dn〉	FILE NAME
96	01/10	11:30	UNLOCK	S040110110000U
97	01/10	12:00	UNLOCK	S040110120030U
98	01/10	12:31	LOCKED	S040110123100U
99	01/10	13:05	UNLOCK	E040110130540U
100	01/10	13:30	UNLOCK	E040110133000L
101	01/10	15:00	LOCKED	S040110150032U
102	01/10	15:31	UNLOCK	S040110153150L
103	01/10	17:02	UNLOCK	E040110170250U
104	01/10	17:09	UNLOCK	S040110170920U
105	01/10	17:50	UNLOCK	S040110175000U
106	01/10	18:21	UNLOCK	S040110182110U
107	01/10	18:50	UNLOCK	S0401101850430U
108	01/10	20:00	UNLOCK	S040110200054U

Press up or down key to highlight the files, and press “Enter” to toggle the lock / unlock status of the individual file.

Once a file is locked, it will not be erased from hard disk even if recurring recording is activated.



# Hardware Setup

## 1、 To enter the menu

Press “SETUP” button on remote controller or front panel to go into SETUP Menu.

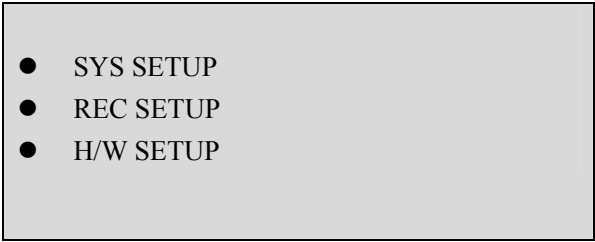
## 2、 Menu and screen prompt operation

After entering the menu, operator can navigate the items by using the up button and down button, either on front panel or remote controller, to highlight the items on the present level of the menu. To go down one level to the highlighted item under the present level of the menu, “Enter” key should be pressed either on front panel or remote controller. To go up one level and exit from the present item, “Exit” key should be pressed either on front panel or remote controller.

When inside dialogue box, operator can use the “Up” or “Down” key to go through the circular list of items. On pressing the “Enter” key, the selectable field under the item will be showed, and the field can be navigated by “Up” or “Down” button, and the highlighted field will be selected on pressing the “Enter” key. Editing of the item will be abandoned, on pressing “Exit” key.

## 3、 Setup Menu

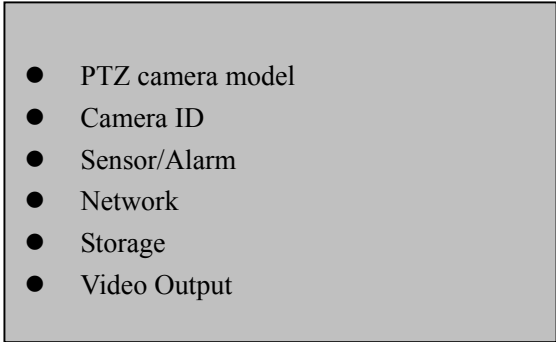
By highlight the “Setup” item on the main menu and press “Enter”, and the screen prompt will be as follows:

- 
- SYS SETUP
  - REC SETUP
  - H/W SETUP

## 1、 Hardware Setting

On entering the hardware settings menu, the operator will be prompted to enter the system password.

After correct system password is entered, then the screen prompt will changed as follows:

- 
- PTZ camera model
  - Camera ID
  - Sensor/Alarm
  - Network
  - Storage
  - Video Output

## 1.1PTZ Camera Setting

Under this item, the screen prompt is as follows:

- ( PTZ camera model )
- CNB-102N
  - PELCO D protocol

Operator can select the PTZ protocol to be employed by this unit to match with the PTZ camera connected.

**Note:** the list of supported PTZ protocol will be expanding, please contact our local agent or regional representative for details.

## 1.2PTZ Camera ID

Under this item, the screen prompt is as follows:

( CAMERA ID )

# 1	01
# 2	02
# 3	03
# 4	04

Operator can input the PTZ camera ID to individual cameras under this menu item, using numeric keys of remote controller or front panel. The PTZ camera ID should be unique among all cameras connected to the same unit.

## 1.3Sensor / Alarm Setting

Under this item, the screen prompt is as follows:

- Sensor type
- Alarm Management
- Alarm Output
- Alarm Period
- Alarm Manual Stop

### 1.3-1 Sensor Type

Under this item, the screen prompt is as follows:

[Sensor type]		
* Sensor 1	NC	[NO]
* Sensor 2	NC	[NO]
* Sensor 3	NC	[NO]
* Sensor 4	NC	[NO]

Use up and down keys to highlight individual alarm input, and use left or right keys to select the type of alarm input. Type of Sensor input, can be NO (normally open) or NC (normally close).

### 1.3-2 Alarm Management Setting

Under this item, the screen prompt is as follows:

[Alarm Management]								
	<b>M1</b>	<b>M2</b>	<b>M3</b>	<b>M4</b>	<b>S1</b>	<b>S2</b>	<b>S3</b>	<b>S4</b>
Alarm1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alarm2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alarm3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alarm4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>SET</b>								

Motion detection for camera 1, 2, 3 and 4 is M1, M2, M3 and M4 respectively. Sensor input 1, 2, 3 and 4 is S1, S2, S3 and S4 respectively. Highlight individual square to associated various M or S to individual alarm output, and press “Enter” to confirm.

After selecting the management, final confirm by highlighting the “SET” and press “Enter”.

### 1.3-3 Alarm output Setting

Under this window, the screen prompt is as follows:

{ Alarm Output }		
# 1	ON	{ OFF }
# 2	ON	{ OFF }
# 3	ON	{ OFF }
# 4	ON	{ OFF }

Use up and down keys to highlight individual sensor input, and use left or right keys to select the condition of alarm output. Type of sensor input, can be NO (normally open) or NC (normally close).

☞ **Default setting by factory “ON”**

### **1.3-4 Alarm Out Period**

Under this item, the screen prompt is as follows:

[Alarm Period]

- 30 sec
- 01 min
- 03 min
- 10 min
- Manual off

This alarm time item, is to configure the alarm output activation duration on associated alarm being triggered. If “continuous” is selected, then the alarm output will be activated forever until manual de-activation of the alarm output is being conducted.

Operator can highlight the value and press “Enter” to select.

### **1.3-5 Manual de-activation of alarm output(Alarm Manual off)**

Under this item, alarm output can be deactivated by pressing “Enter”.

## **1.4 Network**

Under this item, the screen prompt is as follows:

- IP Setup
- Network Password

### **1.4-1 Static internet protocol**

After selecting “IP Setup”, the screen prompt will be changed as follows:

- Static IP
- Dynamic IP

Operator can select the desired IP status, by using up or down key, followed by “Enter”.

If static IP is selected, then the screen prompt will be changed as follows:

- IP Address  
: 192.168.001.201
- GATEWAY  
: 192.168.001.001
- NETWORK  
: 255.255.255.000

Key in the static IP address, Gateway and Sub-Net address using the numeric keys on remote controller. This network setting is for client software operation over the network.

#### **1.4-2Dynamic internet protocol**

If dynamic internet protocol is selected, the screen prompt will be changed as follows:

- Static IP
- Dynamic IP

Then the unit will obtain an IP address from assigned IP Switch. It will usually take 1 to 2 minutes after entering this menu item, for the unit to obtain the dynamic IP address. Once the dynamic IP address is obtained successfully, then this menu item will be quitted automatically.

Caution: During the assignment of Dynamic IP address, lack of response from this unit on “Enter” button being pressed is normal and do not indicate a malfunction. It might take longer time to boot with Dynamic IP.

#### **1.4-3Network Password**

Under this item, the screen prompt is as follows:

[Enter new Password]  
: \_ \_ \_ \_

Under this item, operator is allowed to change the network password. The network password is a combination of 4 digits from 0 to 9. The default network password is “1111”. Operator should use numeric key on front panel or remote controller to input the new password.

[Re-enter Password]  
: \_ \_ \_ \_

Operator will be prompted to enter the new password again to re-confirm.

### 1.5Storage Setting

Under this item, the screen prompt is as follows:

● Secondary	YES	[NO]	FORMAT
● Third	YES	[NO]	FORMAT
● Fourth	YES	[NO]	FORMAT
● IEEE 1394	YES	[NO]	FORMAT

This unit can support 4 numbers of internal hard disk in Maximum. For the first master hard disk, the formatting and recognizing will be started automatically. For the secondary HDD commands under this item is required to be used to confirm the existence of hard disk before the hard disks can be used by the unit.

Select “Yes” for secondary hard disk(s) which exists and has been installed inside this unit, and then press “Enter” to confirm. -> **This version just show up to 2 internal HDD.**

If IEEE1394 external storage is connected, “Yes” should also be selected, and press “Enter” to confirm.

### 1.6Video Output Setting

This mode can select video output condition as Composite out or S-Video out.

# Recording Search / Operation

Recording search is one of the key functions of a digital video recorder. Video clip searching can be according to different kinds of information, like time, alarm and event. Search function can be accessed directly by pressing “Search” button on either front panel or remote controller, then the screen prompt will changed as follows:

- TIME SEARCH
- EVENT SEARCH
- LIST SEARCH

## 1. Time Search

Under time search, the screen prompt is as follows:

- Year : 2004
- Month : 01
- Date : 10
- Time : 10 : 46

Numeric key should be used to input the desired time and date information to be targeted. “Enter” should be pressed to confirm and start the searching.

Press the “CH SEL” button to expand channel 1, channel 2, channel 3 or then channel 4.

Press 5 times to return to the 4-split screen.

Press the “EXIT” button to quit the search menu

## 2. Event Search

Under “Event Search”, the screen prompt will be like the following sample display

NO	DATE	TIME	〈PgUp/Dn〉	FILE NAME
96	01/10	11:30	1 Min	E040110110000U
97	01/10	12:00	5 Min	E040110120030U
98	01/10	12:31	30 Min	E040110123100U
99	01/10	13:05	21 Min	E040110130540U
100	01/10	13:30	3 Min	E040110133000L
101	01/10	15:00	2 Min	E040110150032U
102	01/10	15:31	8 Min	E040110153150L
103	01/10	17:02	11 Min	E040110170250U

Select file and press “Enter” key to confirm and start the searching.

Press the “CH SEL” button to expand channel 1, channel 2, channel 3 or channel 4. Press 5 times to return to the 4-split screen.

Press the “EXIT” button to quit the search menu

*☞ The first letter “E” express Event REC*

### 3. List Search

Under “List Search”, the screen prompt will be like the following sample display:

NO	DATE	TIME	〈PgUp/Dn〉	FILE NAME
96	01/10	11:30	1 Min	E040110110000U
97	01/10	12:00	5 Min	S040110120030U
98	01/10	12:31	30 Min	S040110123100U
99	01/10	13:05	21 Min	S040110130540U
100	01/10	13:30	30 Min	S040110133000L
101	01/10	15:00	2 Min	E040110150032U
102	01/10	15:31	30 Min	S040110153150L
103	01/10	17:02	11 Min	E040110170250U
104	01/10	18:31	30 Min	S040110153150L
105	01/10	19:02	11 Min	S040110170250U

Select file and press “Enter” key to confirm and start the searching.

Press the “Live” button to expand channel 1, channel 2, channel 3 or channel 4.

Press 5 times to return to the 4-split screen.

Press the “EXIT” button to quit the search menu

*☞ The first letter “S” express Schedule REC*

### 4. Recording Operation

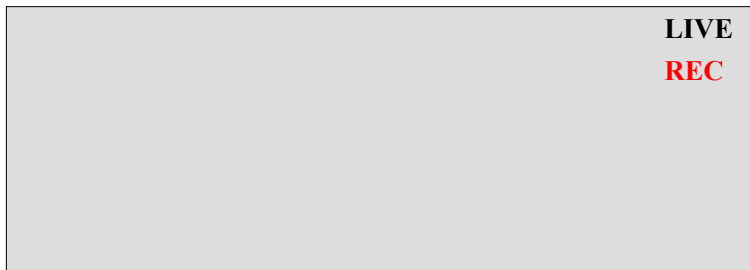
- Before recording, it should be ensured that the connected peripherals are all powered on, and there is video signal connected to video inputs already.
- Note that this unit records basing on segments. Each recording, from start to stop will form one segment.
- If the hard disk is full during recording, and the system is configured as “recurring recording”, then the oldest (and unlocked) video clips will be erased automatically, to make room for new recording. If the unit is not configured as recurring recording, then any types of recording will be stopped.
- By pressing “REC” button, operator will be prompted for system password as follows:

Enter Password

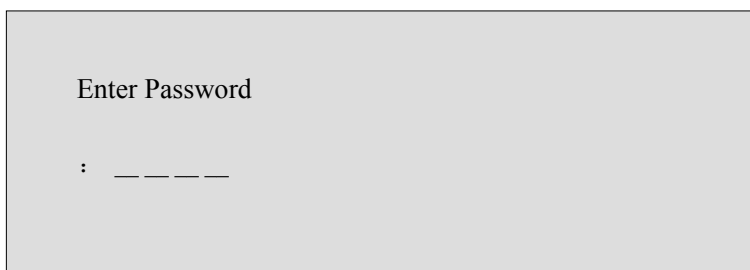
: \_ \_ \_ \_



After correct password is entered by using numeric keys on front panel or remote controllers, then the recording of the unit is manually started. This can be actively confirmed by observing the “REC” indication on screen.



- If the operator need to stop recording, the “REC” button should be pressed again, then the prompt for system password will appear again as follows:



On entering correct system password, the recording will be stopped which is actively verified by the disappear of the “REC” indication on screen.

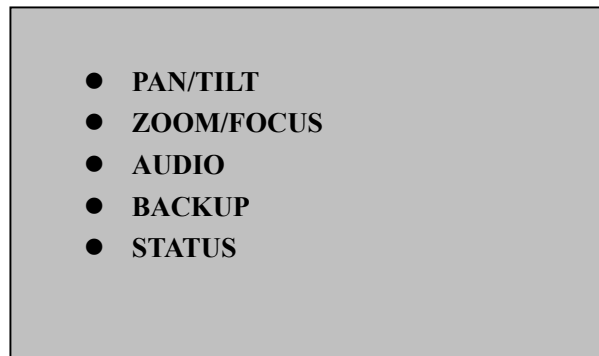
## 5. Playback operation

- Use “Play” button to start playback.
- **Switch between “single channel playback” and “quad playback” by pressing “CH SEL” button. Repeatedly pressing the “CH SEL” button will toggle the playback between individual camera on single channel mode and then quad playback, in circular style.**
- During playback, if both audio inputs are activated, then “Audio” button can be press to toggle between the two audio channels.
- The playback is in circular style. In other word, on finishing of a file, the next file will be played, and on finishing of the last file, the first file will be played. The playback will be circular and continuous until the “Stop” button is pressed.  
The buttons “◀◀” “▶▶” “II” and “■” are only available during playback
- Fast Forward key is used to switch between x2, x4, x8 and x16 playback mode.
- Reward key is used to switch between x1, x2, x4, x8 and x16 playback mode.
- “Pause” key can be used to temporarily stop the playback and freeze the screen on the latest frame.”
- After “Pause” is pressed, pressing the fast forward key will switch the playback between x1/2, x1/4 and x1/8 slow motion forward playback modes.

- “After “Pause” is pressed, pressing the rewind key will switch the playback between x1/2, x1/4, x1/8 slow motion rewind playback mode.
- Pressing “stop” button will stop the playback (without freeze the screen on latest frame).

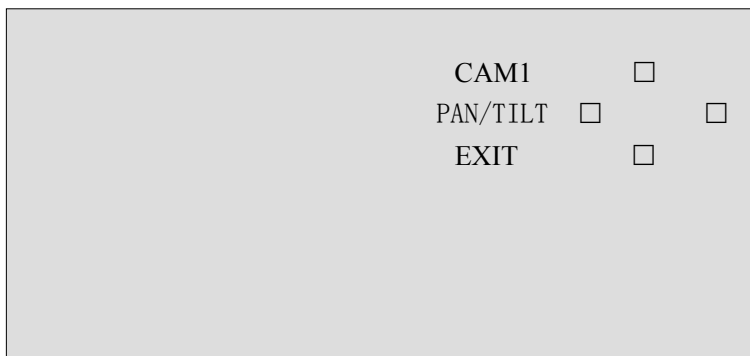
## Other Operation

The “Other operation Menu” items is showed below :



### 1、Pan Tilt Control

Press “Enter” when the “Pan/Tilt” item is highlighted, then the following screen will appear :



In order to control the PTZ motion of camera, the correct PTZ protocol should be selected. At present, Pelco-D, CNB-102N, PTZ protocols are supported by this unit.

#### 1.1 Pan Tilt

After entering the Pan Tilt item, pressing the up, down, left and right buttons on remote controller or the front panel, will move the PT camera to the respective direction. By pressing “Exit” key, operator can return to the other items of menu operation :

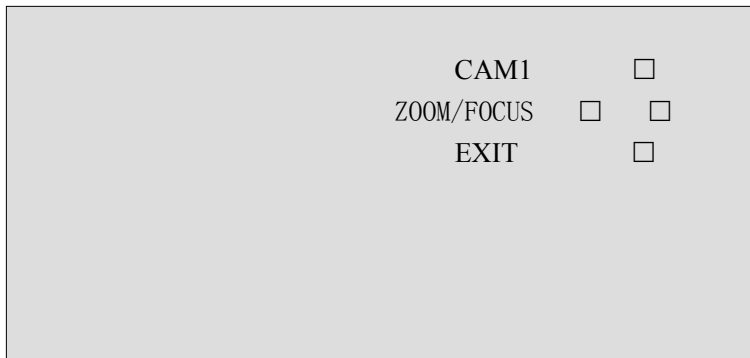
Key	Function
Up、 Down、 Right、 Left	Pan Tilt Direction

## 1.2 Camera selection

By pressing “Pan/Tilt” button on the remote controller or the “Enter” Key on the front panel, camera selection of CAM2,3 or 4 can be done. Once CAM2, 3 or 4 is selected, pan/tilt control can be achieved as per section 1.1.

## 2、 Zoom / Focus control

By selecting “Zoom/Focus” item under the menu, the screen prompt will be as follows:



### 2.1. Zoom / Focus Control

After entering the Zoom / Focus item of the menu, pressing the up, down, right or left keys will allow operator to control zoom or focus functions respectively, as listed in the following table :

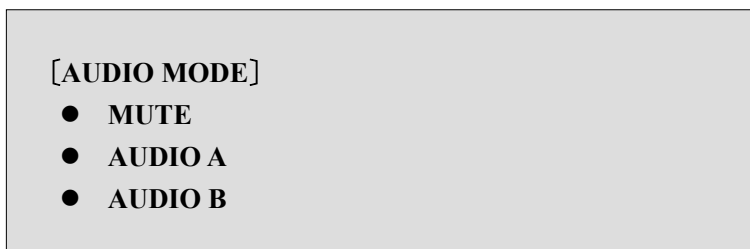
Key	Function
Left, Right button	Focus Control
Up, Down button	Zoom Control

### 2.2. Camera selection

By pressing “Pan/Tilt” button on the remote controller or the “Enter” Key on the front panel, camera selection of CAM2,3 or 4 can be done. Once CAM2, 3 or 4 is selected, focus or zoom control can be achieved as per section 2.1.

## 3、 AUDIO Item

By selecting “Audio” item under the menu, the screen prompt will be as follows:



Choose the required audio output channel. Press the “MUTE” button if you would not like to play support the audio

## 4. Backup

By selecting “Backup” item under the menu, the screen prompt will be as follows:

[Backup]	
●	IEEE 1394
●	USB

### 4.1. IEEE1394 Backup

Select the IEEE 1394 item by pressing “Enter” when the item is highlighted. The screen prompt will be as follows:

[IEEE 1394 Backup]	
●	Partially
●	Entirely

#### 4.1-1. IEEE 1394 Single Period Backup

Select “Partially” by pressing “Enter” when the item is highlighted. The screen prompt will be as follows:

[Start]	
mm/dd/yy	01/10/04
hh:mm	10:00
[End]	
mm/dd/yy	01/10/04
hh:mm	11:55

Press numeric key on remote controller to input the start and end time and date of the period of data to be backed up. The backup will be started immediately, and this menu item will be quitted automatically once the backup is finished.

#### 4.1-2. IEEE 1394 All Files Backup

Select “Entirely” by pressing “Enter” when the item is highlighted, then all files on the internal hard disk will started to be backed up, once the backup is finished, this menu item will be quitted automatically.

### 4.2. USB Backup

Select “USB” by pressing “Enter” when the item is highlighted, then the screen prompt will be as follows:

[Start]	
mm/dd/yy	01/10/04
hh:mm	10:00
[End]	
mm/dd/yy	01/10/04
hh:mm	11:55

Press the numeric keys to input the start and end time and date of the period of data to be backed up to USB device. The USB backup will be started immediately, on completion of the backup, this menu item will be quitted automatically.

## 5. Status Indication

By pressing “Enter” when the “Status” item is highlighted, the detailed system status will be displayed. The following is a sample display of the system status of this unit.

```
● TIME      : 10 : 30 : 15
● VERSION   : DRIVER = 1.16.0002
              OS = (03/12/24)
              APP = 4.0.6(03/12/24)
● NETWORK   : 192.168.1.200
● HDD       : 90.15/100 USED
● STATUS    : FP=25FPS  CR=2MBPS
```

\* **HDD:** It displays the capacity of the first HDD, and will display the status of the second HDD after the first one is full capacity

\* **FR :** FRAME RATE    /    **CR:** COMPRESSION RATE

Press the “EXIT” button to return to the previous menu.

## 6. SPOT Display

By pressing the “Spot” key, high picture quality live loop through video signal will be displayed on the monitor output. By pressing the “Spot” key repeatedly, the SPOT mode will be switched between QUAD, Channel one, two, three or four, in circular manner.

## 7. Hard disk format

All hard disk is required to be format, before it can be used by the unit to store video clips. On connection and recognize of IDE hard disk(s), the following screen prompt will appear:

```
WARNING :
HDD does not exist, or, is not initialized !!
If HDD does not exist, press <EXIT>
If HDD is not initialized, press <ENTER>
```

☞ If there is no hard disk installed yet, press “Exit” button. If there is hard disk installed already, press “Enter” to start formatting of the hard disk.

**WARNING :**

**HDD does not exist, or, is not initialized !!**

**If HDD does not exist, press <EXIT>**

**If HDD is not initialized, press <ENTER>**

**FDISK      OK**

**FORMAT    OK**

**MADIRS    OK**

**Initialized completed,**

**Press <EXIT> to power off**

☞ Upon formatting finished, “Exit” button should be pressed, such that the unit will be shut down automatically and restarted again. After restarting, the unit will go into normal operation

**Warning:** Formatting will erase all data on the hard disk(s). Before conducting the above procedure, operator should double check that the data on the installed hard disk(s) can be erased.

# Network Software Operation

Client software is provide with the unit for operator to operate the unit via remote network connection., Remote operation via this client software can include remote monitoring, remote playback, remote control and remote backup etc..

The recommended minimal personal computer configuration is as follows:

**O/S :** Windows XP or better

**CPU:** PIII 800M or better is recommended for minimal operation. (PIII 1G or better is recommended for optimal operation)

**RAM:** 128M or better

**Display card:** 1024 x 768 resolution, 16bit hi-colour. Ati series, Nivida series, TNT series and Geforce series display is recommended.

## 1、 Graphic user interface introduction

Client software graphic user interface :

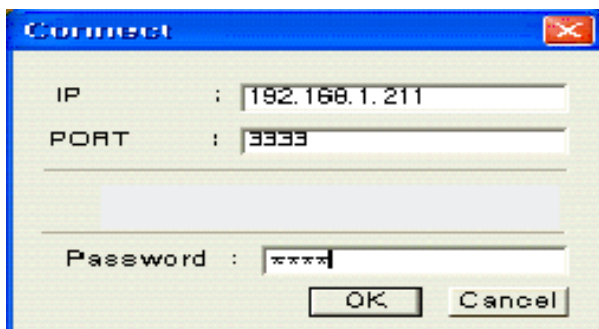


## 2、 Connect and Disconnect

### 2-1、 Signing On:

Click on “Connect” on the GUI. The following dialogue box will pop up. Key in the IP Address and the

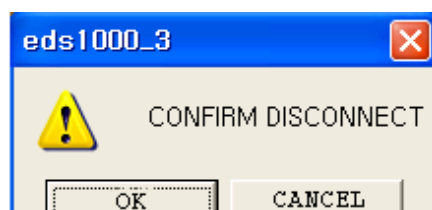
password (Network password as assigned on the DVR end). Click on OK to continue.



**Note:** One DVR allow up to five user to log in simulataneously via the internet or LAN same time.

## 2-2、 Disconnect

Click on the disconnect button, the following dialogue box will pop up. Click “OK” to confirm disconnect.:

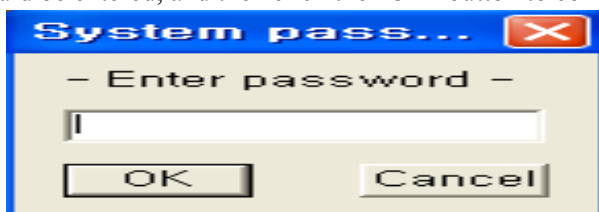


## 3、 Live Display

After connecting, the live image will be displayed automatically. In the midst of operation, when the client software is playing back some recorded image, then on clicking “Live” button, the playback will be stop is image will be switch to live image from the DVR.

## 4、 PTZ Camera Control

After clicking on the “Camera Control” the following dialogue box will pop up. The system password should be entered, and then click the “OK” button to confirm.



After entering the correct password, the operator can control the PTZ and focus of DVR camera remotely.

Operator can click on ①, ②, ③, ④ to select which camera to be controlled. Use “◀”, “▶”, “▼”,

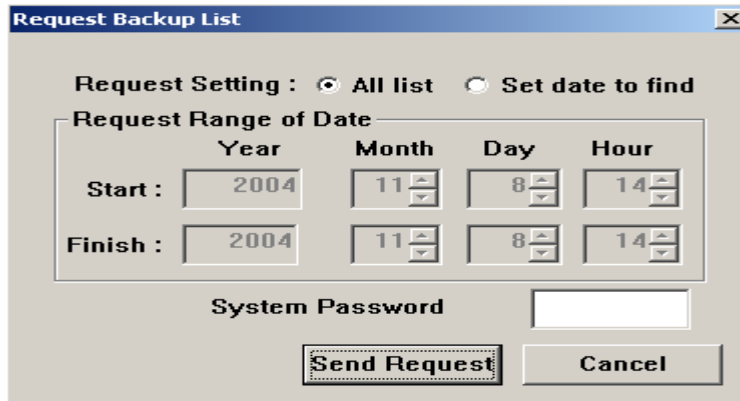


“▲” to control the direction, and use ZOOM, FOCUS“+”, “-”key to control the zoom in/out and focus near/far functions.

**Warning:** If the camera control function is left idling for more than one minute, then the control privileges will be expired and handed over to other user.

## 5、Backup

Press the “BACKUP” button It appears as follows:



**Request Backup List**

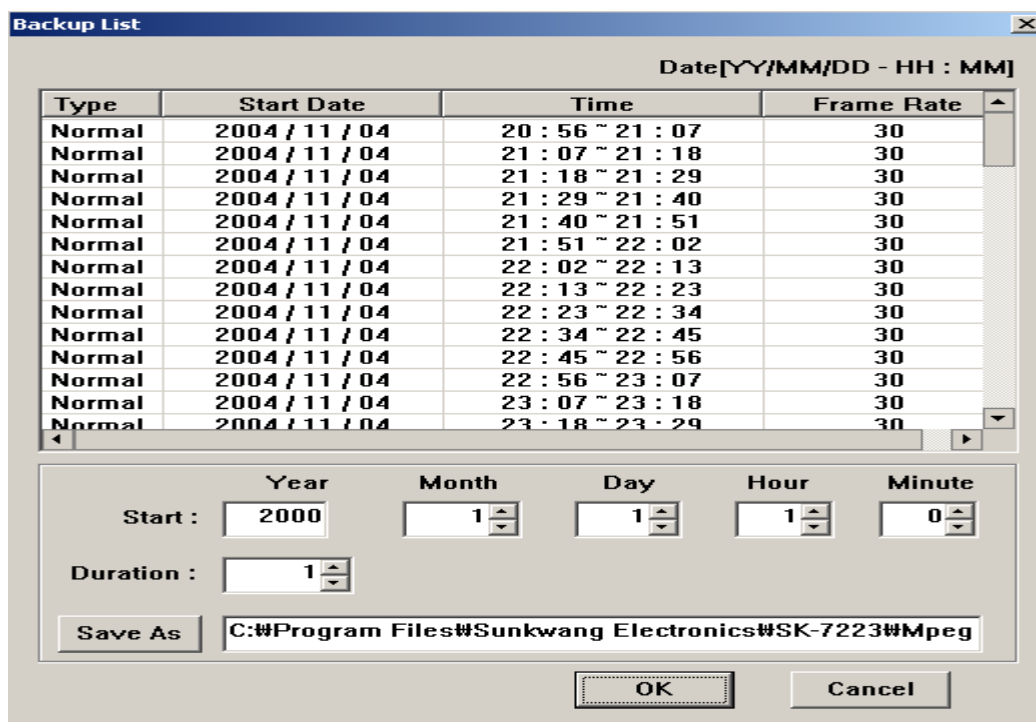
Request Setting : ☒ All list ☐ Set date to find

Request Range of Date

	Year	Month	Day	Hour
Start :	2004	11	8	14
Finish :	2004	11	8	14

System Password

**Send Request** **Cancel**



**Backup List**

Date[YY/MM/DD - HH : MM]

Type	Start Date	Time	Frame Rate
Normal	2004 / 11 / 04	20 : 56 ~ 21 : 07	30
Normal	2004 / 11 / 04	21 : 07 ~ 21 : 18	30
Normal	2004 / 11 / 04	21 : 18 ~ 21 : 29	30
Normal	2004 / 11 / 04	21 : 29 ~ 21 : 40	30
Normal	2004 / 11 / 04	21 : 40 ~ 21 : 51	30
Normal	2004 / 11 / 04	21 : 51 ~ 22 : 02	30
Normal	2004 / 11 / 04	22 : 02 ~ 22 : 13	30
Normal	2004 / 11 / 04	22 : 13 ~ 22 : 23	30
Normal	2004 / 11 / 04	22 : 23 ~ 22 : 34	30
Normal	2004 / 11 / 04	22 : 34 ~ 22 : 45	30
Normal	2004 / 11 / 04	22 : 45 ~ 22 : 56	30
Normal	2004 / 11 / 04	22 : 56 ~ 23 : 07	30
Normal	2004 / 11 / 04	23 : 07 ~ 23 : 18	30
Normal	2004 / 11 / 04	23 : 18 ~ 23 : 29	30

Start : Year 2000 Month 1 Day 1 Hour 1 Minute 0

Duration : 1

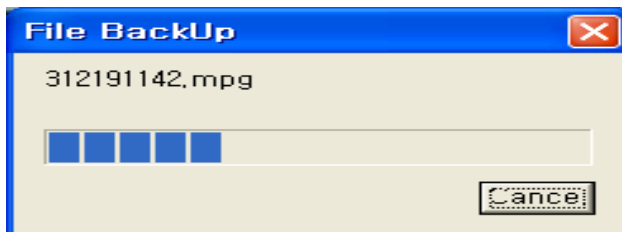
**Save As** C:\Program Files\Sunkwang Electronics\SK-7223\Mpeg

**OK** **Cancel**

Choose the list up with All list or SET Date to find and Enter the correct system password A list of recorded files appears Choose the required file to back up.

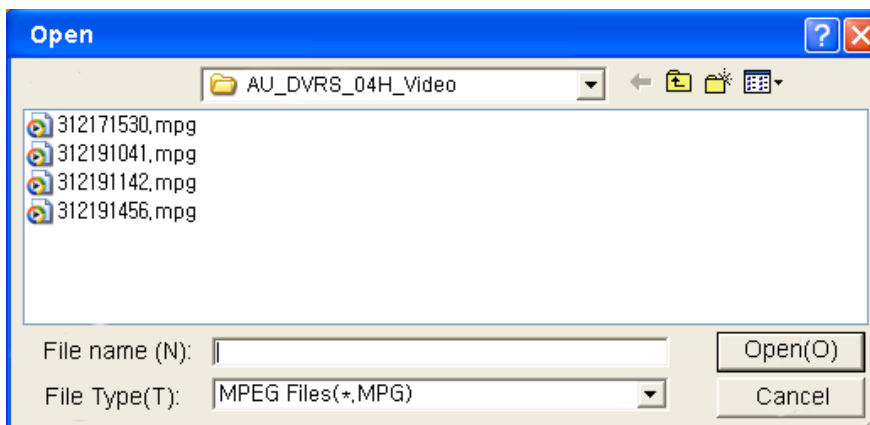
Enter the required date and time to back up.

\* The maximum period of time that can be backed-up to 59 minutes.



## 6、 Open File

After clicking the “Open” button, the following dialogue box will pop up:



Select the desired file Click “OK”. Playback will start automatically.

Backed-up files are saved in the “Mpeg Files” folder, Choose the required file and press Open to open the file.

☐ **File notation illustration 0312171530.MPG --- File start time is 15:30 17 December 2003.**

Press “Stop” will stop the playback.

**Press “Pause” will freeze the playback at the last frame. “Print” can be operated on paused frame, so the paused frame can be printed out as hard copy.**

**Note: \*.MPEG files are “Windows Media Player” compatible.**

**However, the Unified Codec Pack should be installed on PC to playback on “Windows Media player”**

## 7、 Screen Expand

By clicking the “Screen Expand”  button, the screen will be expanded.

By double click each channel, can be expanded each channel.

## **8. Frame Rate Setting**

If the display does not show live picture, or if the playback speed is not in real-time, please choose the original speed of the display or playback from this function

# SPECIFICATION

Description	4ch Digital Video Recorder
Signal Format	PAL/NTSC
Video input	1.0V p-p/75Ω, BNC, 4ch
Video output	1.0V p-p/75Ω, BNC 1ch, S-Video 1ch, Loop_out, BNC 4ch
Audio input	RCA, 2ch
Audio output	RCA, 1ch
Sensor input	NO/NC sensor, 4ch input
Alarm output	4ch
Network interface	10/100 Base-T, Ethernet interface
Video resolution	360×288×4 (PAL), 360×240×4 (NTSC) TV resolution : 250~550 lines
Compression method	MPEG-II
HDD	Support 2ea internal HDD, support 2TB(2,000GB) per each HDD
Power	220V±10%, 50Hz
Operating Temperature	Temperature : -10℃~+50℃; Humidity : < 90%
Dimension	H:80mm W:370mm D:320mm

